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Abundant remains of lesser dwellings were on every side for a considerable distance around, and broken pottery very abundant. I exhumed one perfect skeleton, incased in dry adobe earth and covered with large, shallow, earthen vessels. The cranium would compare favorably with any European, and every tooth was perfect. The right arm had been broken, and united at an angle. I regretted my inability to bring this specimen with me for some of our State institutions.

The motive which decided the location of this pueblo was quite apparent. It was built near the point of a tongue of land at the junction of two fertile valleys, each of which were at the mouth of a large arroya, whose branches gathered the waters which fell in the high mesa in the rainy season, and poured them over the valleys at their mouths, where they sank into the loose, sandy earth, affording natural irrigation. Forty acres of corn were growing on this favored spot, planted by the Navajoes. I noticed no such stone as those used in the large buildings I have described, appear above-ground in the vicinity. The builders seem to have exhausted the supply. No names or inscriptions were found upon the rocks on this trip, and none found in the vicinity of the ruins. The scrubby timber growing in and about the ruins did not differ in appearance or age from that growing generally in the country. The only entrance to this large building was by a door at the northeast corner. The building faced southeast, as did the one at San Mateo.

Neither of the ruins I have described is marked in Wheeler's survey of the pueblo ruins of New Mexico, and the Indians and Mexicans stated they had never been visited by Americans to their knowledge. I saw numbers of lesser ruins in that section of the country. Pottery was scattered everywhere, even to the tops of the highest mountains. I conclude that the large buildings I have described are not of very ancient date—probably were built and occupied at the time of the Spanish conquest; but the ruins found by digging in the ground around them disclose the fact that other buildings preceded them which may be as old as man's occupation of this continent.

ADDITIONS TO THE CATALOGUE OF THE BIRDS OF KANSAS.

BY N. S. GOSS, TOPEKA.

The following observations have been made, and notes gathered, since the publication, May 1, 1886, of the Revised Catalogue of the Birds of Kansas.

PODILYMBUS PODICEPS. (Linn.). Pied-bill Grebe. June 8, 1886, I found the birds breeding in a pond in Meade county. I shot a young bird about two-thirds grown, saw several others, and caught a glimpse in the rushes of an old bird, followed by little chicks not more than a day or two old.

Phalaropus tricolor. (Vieill.). Wilson's Phalarope. June 8, 1886, I found three pairs of the birds breeding on marshy grounds bordering a slough or pond of Crooked creek, Meade county, and I therefore enter the bird as an occasional summer resident in western Kansas; during migration, quite common throughout the State; nests on the ground, usually on hummocks, quite deeply excavated, and lined with leaves from the old dead grasses; eggs, three or four—usually four—ground color, cream to ashy drab, rather thickly but irregularly blotched with varying shades of brown to black. The female is larger and brighter in color than the male, but from limited observations of the birds I am led to think certain writers are mistaken in reporting that the females arrive first and do all the courting, but leave the work of nest-making, incubating, and rearing of the young to the males. I have never been so fortunate as to find either of the birds upon the nest; but certainly

both appear equally as watchful and solicitous, circling around and croaking as one approaches their nests or near their young, (grayish little fellows that leave the nest as soon as hatched.) The earliest arrival noticed in the State was at Neosho Falls, April 29, 1879. In this flock, as in all others seen at or about the time of their arrival, the sexes appeared to be about equally divided, and I am inclined to think further examination will prove the birds to be joint workers in the hatching and rearing of their young. And with a view to remove doubts, I trust all naturalists that are so fortunate as to be upon their breeding grounds during the breeding season, will carefully note and report their observations.

ÆGIALITIS NIVOSA (Cass.) Snowy Plover. Summer resident on the salt plains along the Cimarron river, in the Indian Territory, the northern limits of which extend across the line into southwestern Comanche county; quite common; arrive about the first of May; begin laying the last of May; nest, a depression worked out in the sand; eggs, three, 1.20x.90; pale olive drab, approaching a light clay color, with a greenish tint, rather evenly and thickly marked with irregularly-shaped, ragged-edged splashes and dots of dark or blackish brown. June 18, 1886, I shot two of the birds within the State limits, and saw one more, a female, with two young birds nearly half grown; and just south of the line, in the Indian Territory, I saw several of the birds and started one from a nest in the sand. It was without lining, and nothing near to shelter or hide it from view. The nest contained three eggs, nearly ready to hatch. Their dimensions were 1.20x.90, 1.20x.89, 1.22x.89. In an article published in the July number of the Auk, vol. 3, No. 3, p. 409, I said: "The birds are lighter in color, and the markings about the head not quite so distinct as the pair in my collection, shot at San Diego, California, in November, 1881. I therefore send two of the skins for examination, as I have not any specimens in the breeding plumage from the Pacific coast." This called forth the following note from the editor, Prof. J. A. Allen: "The two birds sent by Colonel Goss are very much lighter in color than the California specimens, taken in the breeding season, but agree exactly with a specimen in Mr. Sennett's collection, taken at Corpus Christi, Texas, May 24, 1882. These three examples differ markedly from the Pacific coast specimens, they showing only the merest trace of the fulvous tinge on the head, while the black markings are much paler, and the upper plumage generally presents a bleached or washed-out appearance. Doubtless additional material will show that the birds of the plains-from Texas northward to Kansas-are well entitled to subspecific separation." It is my intention to visit the grounds next season for the purpose of procuring additional specimens.

Colinus virginianus texanus (Lawr.) Texan Bob-White. The birds are entered in the A.O.U. Check List as "Hab. southern and western Texas, north to western Kansas." On receipt of the list, I wrote Prof. Robert Ridgway, a member of the committee that prepared the list, to know when and where in the western part of the State the birds had been taken. In reply, he says: "Colinus virginianus texanus, as a bird of Kansas, rests on two specimens, adult females, in the National Museum, labeled, respectively, No. 34,425, Republican Fork, May 27, 1864; Dr. Elliott Coues, U. S. A., and No. 34,425, same locality, date, and collector. (See Hist. N. Am. B. 111, p.474.) These specimens agree exactly with typical examples of texanus as compared with virginianus proper." Since the early settlement of the State I have known through report of military men and hunters, that Bob-Whites were occasionally seen on the Cimarron river. I never met with them there, and had taken it for granted that they were C. virginianus; but as the birds were found in western Kansas long before our Bob-Whites, in following up the settlements, reached the central portion of the State, I am now inclined to think further examination may prove the western bird of the

plains to be variety *texanus*, and that they reached that portion of the country by following north on the old military trails. I have written several persons in that region for specimens, but as yet have no reply.

EMPIDONAX PUSILLUS TRAILLII (Aud.) Traill's Flycatcher. Mr. George F. Brenninger, Beattie, Marshall county, has kindly sent me for examination a nest containing three eggs, taken July 17, 1886, in a thick second growth of timber, on the bank of a small creek at Beattie; and writes that he found in the same vicinity quite a number of nests. The earliest found, with a full set of eggs, was June 14th. In the Goss Ornithological Collection is a female, which I shot at Neosho Falls, July 26, 1881; and I have occasionally noticed the birds during the summer months, and have no doubt but what they will prove to be quite a common summer resident. I congratulate Mr. Brenninger on the find, and thank him for calling my attention to the same. The nests are usually placed in upright forks of the small limbs of trees and bushes, from four to ten feet from the ground. A rather deep, cup-shaped nest, closely resembling in form and make-up the nest of Dendroica astiva, composed chiefly of small stems or twigs from plants, and flaxen, fibrous strippings from the same, with a few scattering blades of grass, and here and there an occasional feather, and lined thickly and rather evenly with fine, hair-like stems from grasses; eggs, three and four; dimensions of the three eggs sent, .70x.55, .70x.55, .69x.55, and of a set of four eggs taken June 17, 1881, at Galesburg, Illinois, .72x.55, .72x.55, .72x.54, .70x.54; cream white, thinly spotted and specked with reddish brown; thickest around large end; in form, oval.

Spizella monticola ochracea (Brewst.) Western Tree Sparrow. Prof. William Brewster, in "Notes on some Birds collected by Capt. Charles Bendire, at Fort Walla Walla, Washington Territory, Bull. Nutt. Orn. Club, October, 1882," vol. 7, p. 225, and under the head of "species and varieties calling for special consideration," p.228 gives a full description of the bird, from a careful examination and comparison of the specimens before him with specimens of the typical eastern bird, and decided that the difference in coloration and markings was sufficient to rank it as a variety of S. monticola, and named the bird the Western Tree Sparrow, S. monticola ochracea, giving its habitat, "Western North America, east to Dakota, north to Arctic ocean; Alaska." On the 14th of October, 1883, I shot, at Wallace, several Tree Sparrows, and I was impressed at the time with the thought that they were somewhat paler in color, and different from specimens I had taken in the eastern part of the State; but on comparison I reached the conclusion they were the young birds of the year, and gave the matter no further thought until I noticed the bird entered in the A. O. U. Check List as occurring in "western Kansas." I at once wrote to Professor Brewster for typical specimens of both this and the eastern bird, which I received through his friend, Mr. Arthur P. Chadbourn, of Cambridge, Massachusetts. Just before receiving the specimens, viz., October 25, 1886, I killed three of the birds in Cheyenne county (northwest corner of the State). I now find, in comparing the specimens, that all the western birds, and a female in the Goss Ornithological Collection, taken November 22, 1878, at Neosho Falls, are in every respect similar in color to Mr. Chadbourn's specimen, labeled S. monticola ochracea, Ellis, Kansas, January, 1886. The specimens examined from eastern Kansas are nearly all the true S. monticola. the coloration being fully as rich and deep as that of the eastern specimen, taken in Middlesex county, Massachusetts, December 1, 1882. I therefore enter the Western Tree Sparrow as a winter resident, abundant in middle and western Kansas, and not uncommon in the eastern portion of the State. The western specimens, however, that I have examined, were all captured in the fall or early winter, and I should be led to think it possible that further examination, especially of the birds in their spring plumage, might prove the paler form were to be the immature winter dress, it not for the fact that Professor Brewster, in making his examination, had before him not only his own large collection, but that in the National Museum, to aid him, which must have embraced specimens taken at different seasons of the year.

Turdus ustulatus swainsonii (Cab.) Olive-backed Thrush. June 6, 1886, I saw several of the birds in the timber skirting Crooked creek, in the northern part of Meade county; probably migrants, but so late in the season I think it worthy of mention.

NOTES ON A RED CEDAR SAW-FLY.*

BY C. L. MARLATT.

In the spring of 1885, during the latter part of April and the first of May, a number of saw-flies were observed about some red cedar trees in a yard near Manhattan. By beating the cedars with a sweep net a number of the insects were secured. The males were much more numerous than the females, and resembled them in little other than shape. In color the males are of a shining black, and are somewhat smaller than the honey-yellow-colored females; the antennæ of the former are broadly pectinate, of the latter minutely serrate. (Fig. 2, d, c.)

This saw-fly is nearly related to Lophyrus fulvus Nort. Specimens lately submitted to Mr. E. T. Cresson, of Philadelphia, are pronounced by him to be probably undescribed. If this saw-fly should prove to be unnamed, it may be called Lophyrus (Monoctenus) juniperi. A full description of both sexes is given below.

No careful search was made for larvæ, and none were found. The flies disappeared early in May.

On the 20th of April, 1886, the flies were again observed by me about the trees before mentioned, and a careful search resulted in finding some of the females depositing eggs in the twigs. Flies were afterward seen ovipositing on the cedars on the College grounds and elsewhere in the neighborhood. The following description of the method of oviposition is based on repeated observations of the female at work.

The fly selects a twig, usually green and new grown, and climbing to the extremity or near it, placing itself with its head away from the trunk, it extends its ovipositor (Fig. 2, b), and saws or drills through the scale-like leaf. From six to twelve minutes is occupied in depositing an egg, after which the insect flies to a new twig—but rarely is more than one egg placed in a twig before leaving it. The puncture made in the bract may be detected, though with difficulty, by the minute mass of "saw dust" at the point pierced. The punctured scale afterward dies, turns yellow, and becomes somewhat bulged by the increase of the egg in size—frequently cracking apart sufficiently to allow the egg to be seen. (Fig. 1, c.) The whitish oval egg, about $\frac{1}{24}$ of an inch long (Fig. 1, b), is found on lifting the scale pierced to be immediately beneath and placed in a direction parallel to it.

The female is much less active than the male, allowing a near approach, and may even be examined through a hand-glass while ovipositing. In early morning or on cool days, both sexes are quite sluggish and may be readily taken. In the warmer portion of the day the males, especially, may be seen flying briskly about the trees, easily taking alarm on a near approach, and when thus alarmed falling—flying off,

^{[*}The notes on the life history of this Saw-Fly, and those following on the oviposition of the Buffalo Tree-Hopper, were made while the writer was acting as assistant in the Department of Entomology of the Kansas State Agricultural College; and as forming a part of the report of that department, they are reproduced here by permission.